

Technics
Stereo Double Cassette Deck
RS-TR333

OPERATING INSTRUCTIONS



Before operating this unit, please read these instructions completely.

Dear Stereo Fan

We want to thank you for selecting this product and to welcome you to the growing family of satisfied Technics product owners around the world. We feel certain you will get maximum enjoyment

from this new addition to your home.

Please read these operating instructions carefully, and be sure to keep them handy for convenient reference.

Contents

Suggestions for Safety	2	Recording	11
Accessories	3	Edit-Recording	12
Before Use	3	Convenient Features for Recording	13
Connections	3	Recording with High Tone Quality	14
About Cassette Tapes	4	After Recording	15
Maintenance	4	Technical Specifications	15
Front Panel Controls and Functions	5	Troubleshooting Guide	16
Playback	8		

Suggestions for Safety

■ Use a standard AC wall outlet

1. Use from an AC power source of high voltage, such as for an air conditioner, is very dangerous.

There is the possibility that a fire might be caused by making such a connection.

2. A DC power source cannot be used.

Be sure to check the power source carefully, especially on a ship or other place where DC is used.

■ Grasp the plug when disconnecting the power supply cord

1. Wet hands are dangerous.

A dangerous electric shock may result if the plug is touched by wet hands.

2. Never place heavy items on top of the power supply cord, and never force it to bend sharply.

■ Place the unit where it will be well ventilated

Place this unit at least 10 cm (4") away from wall surfaces, etc.

■ Avoid places such as the following:

In direct sunlight or in other places where the temperature is high.

In places where there is excessive vibration or humidity.

Such conditions might damage the cabinet and/or other component parts and thereby shorten the unit's service life.

■ Be sure to place the unit on a flat, level surface

If the surface is inclined, a malfunction may result.

■ Never attempt to repair or reconstruct this unit

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidentally touched.

■ Take particular care if children are present

Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.

■ If water is spilled on the unit

Be extremely careful if water is spilled on the unit, because a fire or serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.

■ Avoid spray-type insecticides

Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.

■ Never use alcohol or paint thinner

These and similar chemicals should never be used, because they might cause flaking or cloudiness of the cabinet finish.

■ Disconnect the power supply cord if the unit will not be used for a long time

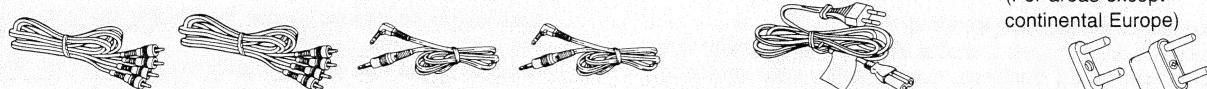
If the unit is left for a long time with the power ON, this will not only shorten its useful operation life, but may also cause other troubles.

■ If trouble occurs

If, during operation, the sound is interrupted or indicators no longer illuminate, or if abnormal odor or smoke is detected, immediately disconnect the power cord plug, and contact your dealer or an Authorized Service Center.

Accessories

- Stereo connection cables 2
- L-type cables 2
- AC power supply cord 1
- Power plug adaptor 1
(For areas except continental Europe)



Configuration of the AC power supply cord differs according to area.

Before Use

Be sure to disconnect the mains cord before adjusting the voltage selector.

Use a minus (-) screwdriver to set the voltage selector (on the rear panel) to the voltage setting for the area in which the unit will be used.

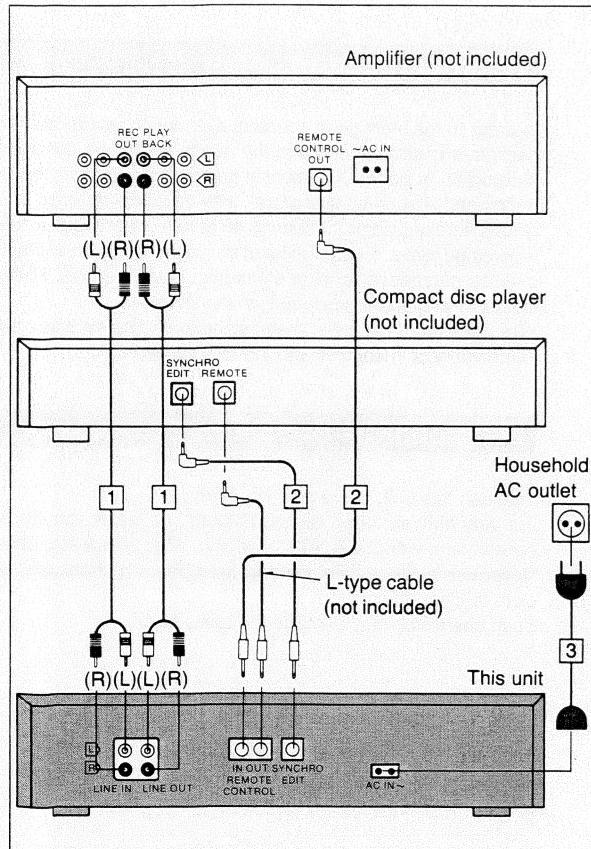
(If the power supply in your area is 117 V or 120 V, set to the "127 V" position.)

Note that this unit will be seriously damaged if this setting is not made correctly. (There is no voltage selector for some countries; the correct voltage is already set.)

Connections

Make connections in the numbered sequence by using the included cables.

- 1 Connect the stereo connection cables.**
- 2 Connect the L-type cables.**
- 3 Connect the AC power supply cord.**



The illustration at the left shows an example of connections made when this unit is combined with a Technics hi-fi component system, and shows only the connections to be made to and from this unit in that combination.

Refer to the illustration together with the instructions provided below.

"REMOTE CONTROL IN" terminal

Make a connection from this terminal to the control terminal for a cassette deck with a Technics receiver or a Technics amplifier. (For detailed information, refer to the operating instructions of the Technics receiver or the Technics amplifier.)

"REMOTE CONTROL OUT" terminal

Make a connection from this terminal to the "REMOTE INPUT" terminal of a Technics graphic equalizer or to the "REMOTE" terminal of a Technics compact disc player.

(For detailed information, refer to the operating instructions of the Technics graphic equalizer or the Technics compact disc player.)

"SYNCHRO EDIT" terminal

Make a connection from this terminal to a terminal that has the synchro-edit function of a Technics compact disc player. See page 13. (Contact your dealer for details.)

AC power supply cord (3)

The configuration of the AC outlet and AC power supply cord differs according to area.

For areas except continental Europe

If the power plug will not fit your socket, use the power plug adaptor (included).



About Cassette Tapes

Avoid the following types of tapes

- Cassette tapes exceeding 90 minutes

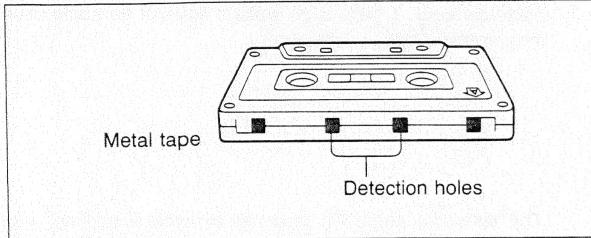
These tapes are handy for their long playback and recording time but be careful about repeatedly stopping and starting, rewinding and fast forwarding these tapes in short intervals as they are thin, tend to stretch and may become entangled in the machine.

- Fe-Cr tape (TYPE III)

The high range will be emphasised and a flat frequency response characteristic cannot be obtained.

- Metal tape without detection holes in the cassette

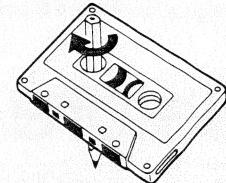
Recordings will be very distorted. (There is no playback problem, however.)



Notes about the handling of cassettes

If the tape in the cassette is loose, the tape can easily break during use or otherwise be damaged.

Never touch the tape itself, or attempt to pull it out of the cassette.



Use a pencil or similar object to take up the slack.

Avoid tape storage in the following places

Tape can be damaged if it is stored in places such as described below.

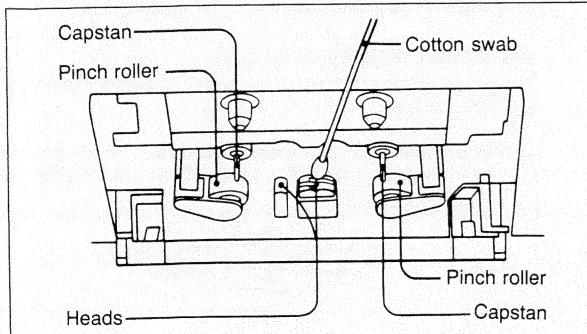
- Where the temperature is high (95°F/35°C or higher) or where the humidity is high (80% or higher).
 - Where there is a strong magnetic field (near a speaker, on top of a TV, etc.).
 - In direct sunlight.

Maintenance

Head care

To assure good sound quality for recording and playback, be sure to clean the heads after approximately every 10 hours of use.

- 1) Press the power "STANDBY /ON" switch to turn the unit off.
 - 2) Press the eject button.
 - 3) Clean the heads, pinch roller and the capstan shaft of each deck with a cotton swab (or with a soft, lint-free cloth) slightly moistened with alcohol.
Do not use any solution other than alcohol for head cleaning.



Head demagnetisation

In order to maintain good sound quality during recording and playback, it is recommended that the heads should be demagnetized if distortion or poor sound quality persist after cleaning the heads. If the heads become magnetized, they could create noise in recordings, loss of high-frequency response, or erasure of valuable recordings. Several types of head demagnetizers are available and may be purchased at local electronics supply stores. Follow the instructions that are supplied with the device.

- Do not bring any type of metal objects or tools such as magnetic screwdrivers in contact with the head assembly.

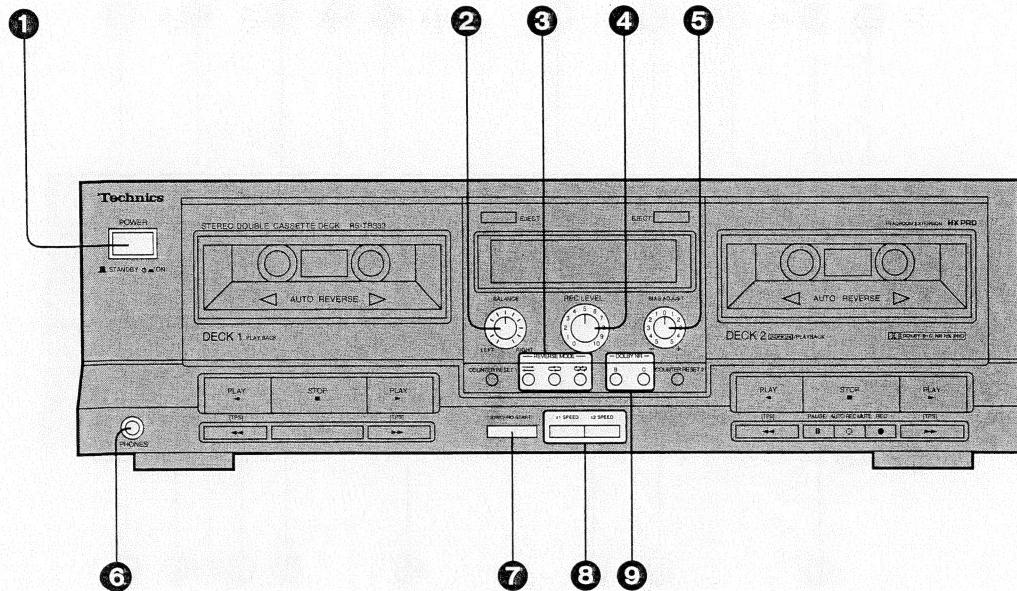
Maintenance of external surfaces

To clean this unit, use a soft, dry cloth.

For very dirty surfaces, dip a soft cloth in a weak soap-and-water solution and wring well. After cleaning, wipe with a soft, dry cloth. Never use alcohol, paint thinner, benzine, or a chemically treated cloth to clean this unit.

Such chemicals may damage the unit's finish.

Front Panel Controls and Functions



Controls common to both decks

① Power "STANDBY ⏪/ON" switch (POWER ■ STANDBY ⏪ ■ ON)

This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the STANDBY ⏪ position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

② Recording-balance control (BALANCE)

This control is used to balance the left and right sound levels of deck 2 (See page 11) during recording.

③ Reverse-mode selectors (REVERSE MODE)

These selectors can be used for selection of the reverse mode (for either playback or recording). (See pages 9, 11 and 12.)

④ Recording-level control (REC LEVEL)

This control is used to regulate the recording level of deck 2 (See page 11).

⑤ Bias-adjustment control (BIAS ADJUST)

The frequency response for each tape type can be equalized by using this control (for only deck 2). (See page 14.)

⑥ Headphones jack (PHONES)

⑦ Synchro-start button (SYNCHRO START)

This button is used to start a edit-recording, simultaneously starting deck 1 (the playback deck) and deck 2 (the recording deck). (See page 12.)

⑧ Edit-recording tape-speed buttons (×1 SPEED, ×2 SPEED)

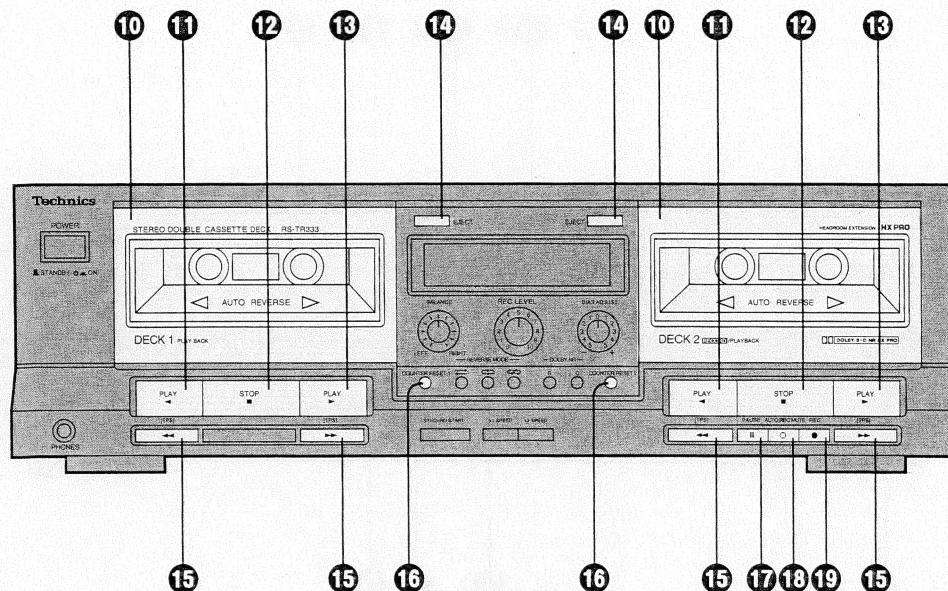
These buttons are used to select the recording speed during edit-recording. (See page 12.)

⑨ Dolby noise-reduction buttons (DOLBY NR)

These buttons are used to reduce the hissing noise heard from the tape. This unit is provided with both the B-type and C-type noise-reduction systems. (See page 9.)

Front Panel Controls and Functions

(continued)



Controls applicable to deck 1 and/or 2

⑩ Cassette holder

⑪ Reverse-side playback button (◀ PLAY)

This button is used to start the playback or recording (of deck 2 only) of side "B" of the cassette.
(The tape will move in the right-to-left direction.)

⑫ Stop button (■ STOP)

This button is used to stop tape movement.

⑬ Forward-side playback button (▶ PLAY)

This button is used to start the playback or recording (of deck 2 only) of side "A" of the cassette.
(The tape will move in the left-to-right direction.)

⑭ Eject button (EJECT)

This button can be used to open the cassette holder.

⑮ Rewind/fast-forward/search button (◀◀/▶▶ TPS)

This button is used to fast-forward or rewind the tape or to easily search for a tune's beginning quickly. (See page 10.)

⑯ Tape counter reset button

(COUNTER RESET 1, COUNTER RESET 2)

This button is used to reset the tape counter indication to "000".

⑰ Pause button (■ PAUSE)

This button is used to temporarily stop the tape playback or recording of deck 2 only.

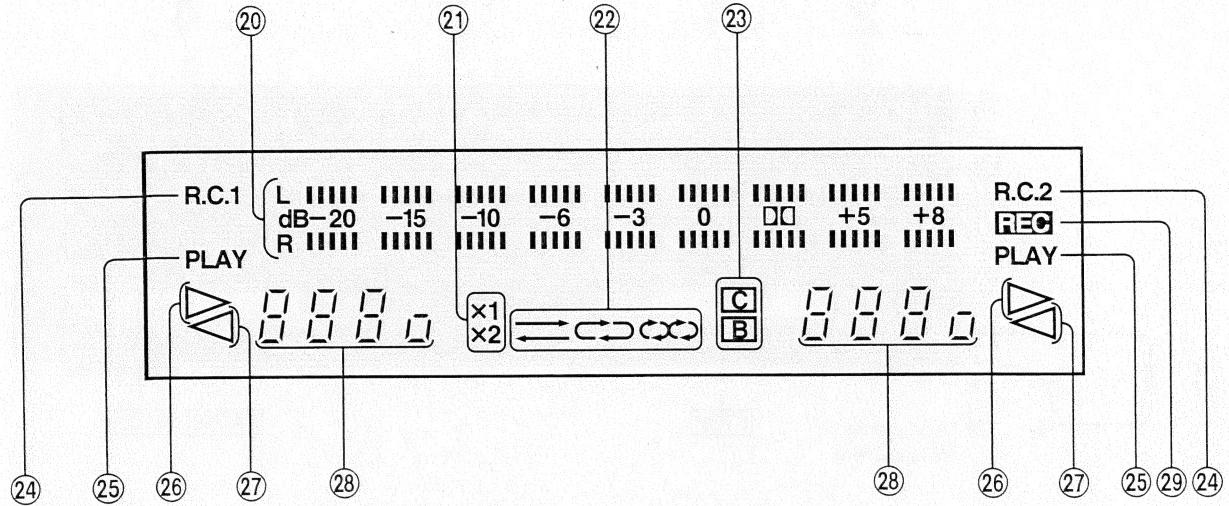
⑱ Automatic-record-muting button

(○ AUTO REC MUTE)

This button is used to make a silent interval on the tape while recording is in progress on deck 2. (See page 13.)

⑲ Record button (● REC)

This button is used to set deck 2 to the recording stand-by mode.



Indicators common to both decks

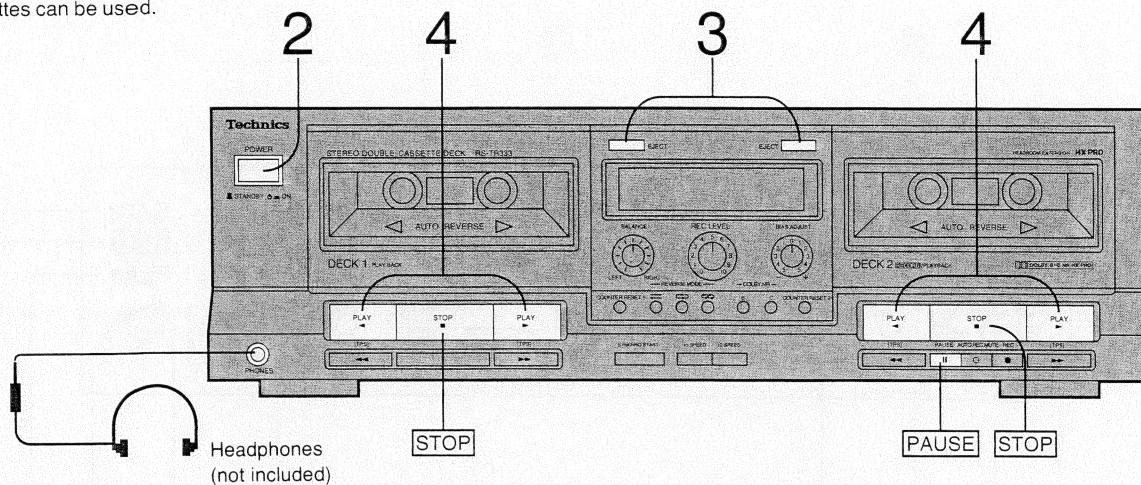
- (20) **Input level meter**
During playback, this meter indicates the level of the recorded sound.
During recording, it indicates the level being recorded, adjusted by the recording-level control.
- (21) **Edit-recording tape-speed indicators ($\times 1$, $\times 2$)**
One of these indicators illuminates to show which of the edit-recording speeds was selected by pressing one of the edit-recording tape-speed buttons.
- (22) **Reverse-mode indicators (\longleftrightarrow , \leftrightarrow , $\leftrightarrow\leftrightarrow$)**
Each indicator illuminates to show which of the reverse modes was selected by the reverse-mode selectors.
- (23) **Dolby noise-reduction indicators ([B], [C])**
Each indicator illuminates to show the type of Dolby noise-reduction system selected by pressing one of the Dolby noise-reduction buttons.

Indicators applicable only to deck 1 or 2

- (24) **Remote-control indicator (R.C.1, R.C.2)**
Illuminates to indicate that this unit can now be controlled by the remote-control transmitter of the appropriate receiver connected.
- (25) **Playback indicator (PLAY)**
When this indicator illuminates steadily, it indicates that this unit is in the playback or recording mode (of deck 2 only). When flashing continually, indicates that deck 2 is in the pause mode or in the recording stand-by mode.
- (26) **Forward-side indicator (\rightarrow)**
Illuminates during playback or recording (of deck 2 only), to indicate that side "A" of the tape is being used.
- (27) **Reverse-side indicator (\leftarrow)**
Illuminates during playback or recording (of deck 2 only), to indicate that side "B" of the tape is being used.
- (28) **Tape counter**
Indicates the amount of tape movement (separately for tape deck 1 and tape deck 2). The least significant digit indicates tape movement.
- (29) **Recording indicator ([REC])**
Illuminates to indicate that deck 2 is in the recording stand-by mode or is recording.

Playback

Either normal, CrO₂ or metal type cassettes can be used.



Normal play

- 1 Switch the amplifier ON, and select the "tape" input source.
- 2 Switch ON the power "STANDBY (I) /ON" switch.
- 3 Press the eject button for deck 1 or deck 2 to be used for playback, and then insert the cassette tape.
(The part of the cassette where the tape is exposed should face downward.)



- 4 Press the playback button.
 - ▶ PLAY: Plays side "A" (side facing outward).
 - ◀ PLAY: Plays side "B".
(The playback indicator will illuminate, and playback will begin.)

■ To temporarily stop playback (deck 2 only) Press the pause button.

(The playback indicator will begin flashing.)

To resume playback, press the playback button corresponding to the side of the tape being played.

■ To stop playback Press the stop button.

(The playback indicator will switch OFF.)

Notes:

- Deck 1 and deck 2 cannot be used for playback at the same time.
- Do not press the eject button while the tape is moving; doing so might cause a malfunction or damage the tape.
- Should the playback button of one of the decks be pressed while the other deck is in the play mode, playback of the first deck will stop.
- Tape deck 1 will stop if a recording or playback is started on tape deck 2 while tape deck 1 is in the playback or tune search mode.

■ To listen through headphones

Connect headphones (not included) to the headphones jack.

Plug type: 6 mm (1/4") phone plug, stereo type.

Note:

- Avoid listening for prolonged periods of time to prevent hearing damage.

To listen to a Dolby NR recorded tape

Dolby noise-reduction buttons and indicators

B **C**

—DOLBY NR—



Press the button which corresponds to the type of Dolby noise-reduction which was activated during recording.
(The Dolby noise-reduction indicator now lights).

- To switch OFF the Dolby noise-reduction system, press the button corresponding to the Dolby noise-reduction indicator that is illuminated. (The indicator will then switch OFF.)

About the Dolby noise-reduction recording/playback system

The Dolby noise-reduction system is a system designed to effectively reduce the annoying high-frequency "hissing" noise typically heard from tapes if this system is not used. During recording, the system functions to increase the level of the high-frequency part of the sound, and then, during playback, that same portion is weakened and returned to the previous level. This unit includes two types of Dolby noise-reduction systems, the Dolby B NR-type and the Dolby C NR-type, and the Dolby HX PRO headroom extension system.

Dolby B-type noise-reduction system

Noise is reduced to about one-third.

Use this system when playing back tapes recorded by the Dolby B noise-reduction system, such as prerecorded music tapes, etc.

Dolby C-type noise-reduction system

Noise is reduced to about one-tenth.

Use this system for the recording and playback of sound sources that have a wide dynamic range and good tone quality, such as FM broadcasts of live performances, etc., and for playing back such tapes.

Dolby HX Pro headroom extension system

By functioning to improve the maximum output level of the tape's high-frequency range, this system permits recordings without a drop of the level of the sound source's high-frequency range. In addition, by using the system in parallel with this unit's noise-reduction system, recording and playback with a greatly extended dynamic range is possible.

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

"DOLBY", the double-D symbol and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

Various playback functions

Reverse-mode selectors and indicators

—REVERSE MODE—

1 **2** **3**

The reverse-mode selectors are used to select either of three different playback modes.

1 Select this mode to playback only one side of a cassette tape.

(The " reverse-mode indicator will then illuminate.)
When the playback of the selected side has finished, tape movement will stop automatically.

2 Select this mode to playback both sides of a cassette tape continuously.

(The " reverse-mode indicator will then illuminate.)
This playback will continue eight times or until the stop button is pressed.
(One "time" is counted when side "B" of the tape finishes playback. If playback is started from side "B", side "A" will play only seven times.)

3 Select this mode to playback both sides of cassette tapes in decks 1 and 2 continuously.

(This is called "series playback".)
(The " reverse-mode indicator will then illuminate.)
This mode is convenient for enjoyment of a long period of uninterrupted background music.
Both sides (from side "A" to side "B") of the tape in deck 1 are played first, and then both sides of the tape in deck 2. This playback will continue eight times or until the stop button is pressed.
(One "time" is counted when side "B" of the tape in deck 2 finishes playback. If playback is started from deck 2, the tape in deck 1 will play only seven times.
Likewise, if playback is started from side "B" of the tape in deck 1, side "A" of the tape in deck 1 will be played only seven times.)

Playback (continued)

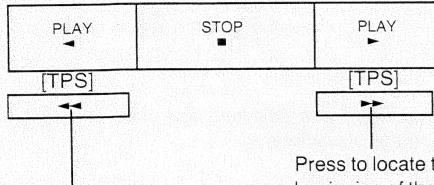
To locate and play a certain tune

■ To find a tune's beginning

(TPS: Tape Program Sensor)

Press the rewind/fast-forward/search button during playback. After the tune's beginning is located, the tune will begin playing.
(The playback indicator will flash rapidly while the tune's beginning is being located.)

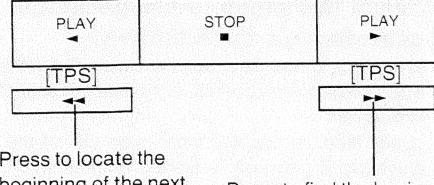
During playback of side "A" (forward) (►):



Press to find the beginning of the recent or a previous program.

Press to locate the beginning of the next program.

During playback of side "B" (reverse) (◀):



Press to locate the beginning of the next program.

Press to find the beginning of the recent or a previous program.

To locate a certain tune that is several tunes before (or after) the tune now playing, repeat the same steps as many times as necessary.

If the reverse-mode selector setting is "CD" or "CX", the tape will reverse its direction of movement when it reaches its end, and the search will continue on the opposite tape side.

(If, after the tape reverses direction, the tune is not located, the tape will stop when it reaches its end.)

Note:

Note that this feature might not function correctly under the following circumstances:

If there is noise between tunes.

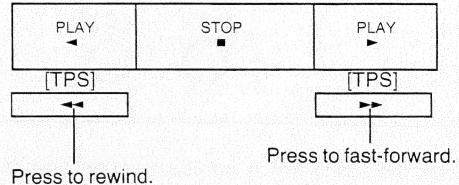
If the silent interval between tunes is less than 4 seconds.

If there is a particularly low level of sound, or a silent interval, at any place within the tune.

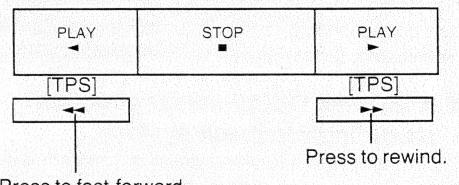
■ To fast-forward or rewind the tape

While in the stop mode, press the appropriate button according to the following figures.

If side "A" is being played (forward) (►):



If side "B" is being played (reverse) (◀):



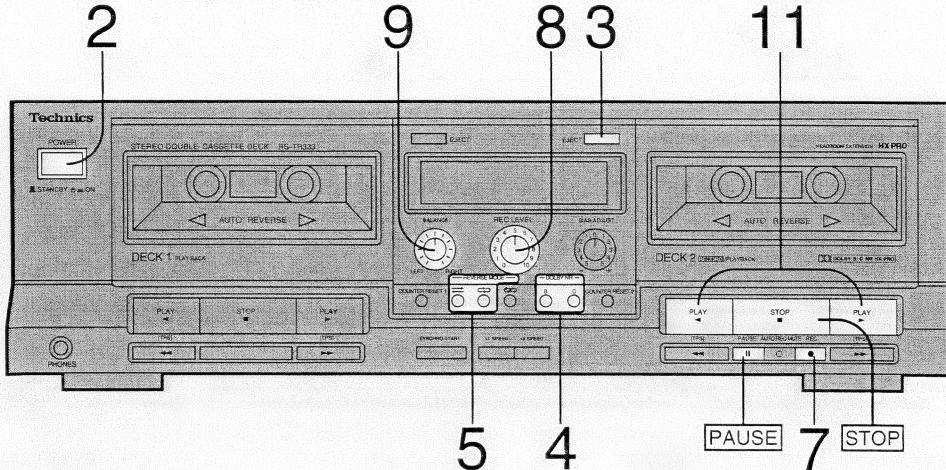
Notes:

- Cassette tapes in tape deck 1 and tape deck 2 can be advanced or rewound at the same time.
- While deck 2 is being used to make a recording (from LINE-IN), deck 1 can be used for fast-forwarding or rewinding a tape.

Recording

(deck 2 only) — To record from a sound source other than another tape

Either normal, CrO₂ or metal type cassettes can be used.

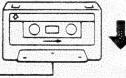


Normal recording

- Recordings cannot be made on the leader tape (attached to each end of recording tape), so advance the tape slightly from its end before starting a recording.

1 Switch the amplifier ON, and select the input source.

2 Switch ON the power "STANDBY /ON" switch.

3 Press the eject button, and then insert the cassette to be used for recording. 

(The part of the cassette where the tape is exposed should face downward.)

4 Press the button corresponding to the Dolby noise-reduction system (B or C) to be used. [The Dolby noise-reduction ("B" or "C") indicator will illuminate.]

If neither Dolby noise-reduction system is to be used, press the Dolby noise-reduction button corresponding to the Dolby noise-reduction indicator that is illuminated. (The indicator will then switch OFF.)

5 Select the appropriate reverse mode.

[The reverse-mode indicator ("↔" or "↔↔") will illuminate.]

 **Select this mode to record on one side only.**

The recording will stop at the end of one side of the tape depending which side was selected.

 **Select this mode to record on both sides.**

The recording will be made on side "B" after recording on side "A". The tape will stop at the end of side "B".

6 The sound source to be recorded should be played before the recording is started in order to adjust the recording level.

7 Press the record button.

(The recording indicator will illuminate and the playback indicator will flash continuously; the unit will be in the recording stand-by mode.)

Notes:

- Switch OFF (by pressing the corresponding edit-recording tape-speed button) whichever edit-recording tape-speed indicator that is illuminated.
- If this unit is used in combination with a Technics compact disc player that has a synchro-edit terminal, switch OFF the compact disc edit indicator on the compact disc player (by pressing the stop button on the compact disc player).

8 Adjust the recording level.

Adjust so that the indication of the input level meter occasionally is as high as shown below.

Normal tape, CrO ₂ tape	Metal tape
□□ (+3)	+5

9 Adjust the left/right recording balance.

10 Stop the play being done so as to adjust the recording level.

11 Start recording, then start playing the source to be recorded from the beginning.

If only one side of the tape (reverse mode position: ↔) is to be recorded, press the playback button that corresponds to that side.

To record on both sides of the tape (reverse mode position: ↔↔), press the forward-side playback button (►).

(The playback indicator will illuminate steadily, and the recording will begin.)

If you use bias adjustment function to record with high tone quality, see page 14.

If you don't use this function, set the bias-adjust control to 0.

**■ To temporarily stop recording
Press the pause button.**

(The playback indicator will begin flashing.)

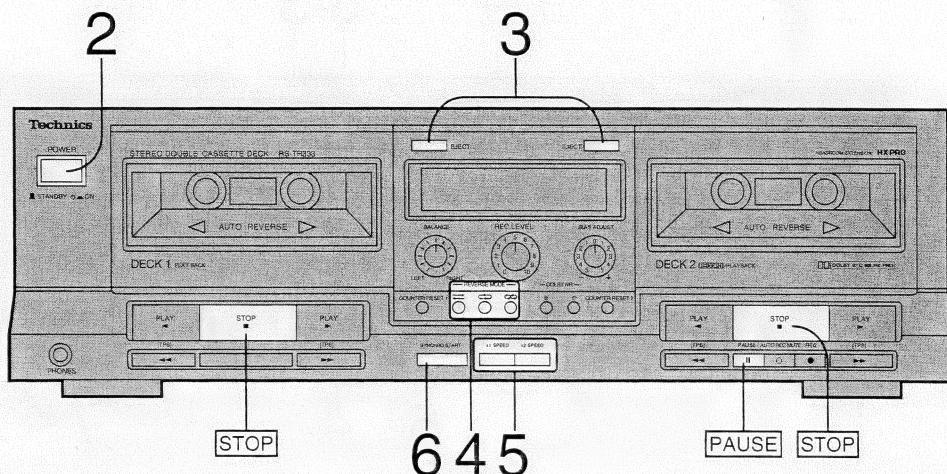
To resume recording, press the playback button corresponding to the side of the tape being recorded upon.

**■ To stop recording
Press the stop button.**

Edit-Recording

Changes can be made while recording from one tape to another

Either normal, CrO₂ or metal type cassettes can be used.



To record from Deck 1 to Deck 2

- 1 Switch the amplifier ON, and select the "tape" input source.
- 2 Switch ON the power "STANDBY () / ON" switch.
- 3 Press and insert the cassette for recording into deck 2. Then insert the cassette for playback into deck 1.
(The part of the cassette where the tape is exposed should face downward.)



- 4 Select the appropriate reverse mode.
[The reverse-mode indicator ("↔" or "↔↔" or "↔↔↔") will illuminate.]
 - ↔ Make this setting to record on one side only.
At this setting, the recording will stop at the end of one side of the tape.
 - ↔↔ Make this setting to record on both sides.
↔↔ The recording will be made on side "B" after recording on side "A"; the tape will stop at the end of side "B".
Check to be sure that forward-side indicator (>) of both decks is illuminated to record on both sides.

In the "↔↔" mode:

If the tape for recording in tape deck 2 is longer than the tape to be played back in tape deck 1, the tape in tape deck 1 will continue to playback eight times (unless the stop button is pressed sooner) until the tape in tape deck 2 reaches the end of side "B".

- 5 Select the speed at which the recording will be made.
[The edit-recording tape-speed indicator ("×1" or "×2") will illuminate.]
 - ×1: For operation at the normal tape speed
 - ×2: For operation at the high tape speed

- 6 Press the synchro-start button.

(The recording will begin.)

In order to avoid an operation error, be sure to press the edit-recording tape-speed button after the edit-recording is finished, and check to be sure that the edit-recording tape-speed indicator is switched OFF.

Notes:

- Edit-recordings cannot be made from deck 2 to deck 1.
- Recording level as well as equalizer effects and Dolby noise-reduction effects are recorded on to the tape in deck 2 exactly as they were originally recorded on the tape in deck 1.
- Because noise-reduction effects cannot be heard in the playback sound, when listening to a tape recorded by employing noise-reduction, use the treble tone control on the amplifier to reduce the treble range.
- While an edit-recording is in progress, you can enjoy some other source. Select the desired sound source by using the input selectors on the amplifier, and start the performance.

To temporarily stop an edit-recording Press the pause button.

(The playback indicator will begin flashing and playback will continue on tape deck 1.)

To resume recording, press the playback button corresponding to the side of the tape being recorded upon.

To stop an edit-recording Press the stop button of deck 2.

Your attention is drawn to the fact that recording pre-recorded tapes or discs on other published or broadcast material may infringe copyright laws.

To omit unwanted material during edit-recording

Press the pause button.

Deck 2 will change to the recording stand-by mode, and playback will continue on deck 1.

Press the playback button corresponding to the side of the tape being recorded when the tape in deck 1 reaches the point where you want to record.

To locate a certain tune while an edit-recordings is being made

1. Press the stop button of deck 1.

(A silent interval of about 4 seconds will then be made on the tape in deck 2, and then deck 2 will change to the recording stand-by mode.)

2. Press the playback button and then press the rewind/fast-forward search button of tape deck 1 to locate the desired program. Repeat this step until the desired program is located.

3. To resume recording, press the synchro-start button.

Convenient Features for Recording

Compact disc synchro-edit-recording

When a Technics compact disc player with the compact disc synchro-edit function is used in combination with this unit, recordings can be made on side "A" and side "B" of the tape, without interruptions of tracks, in conjunction with the tape length.

Be sure to connect the stereo connection cable of a Technics compact disc player with the amplifier when using the synchro edit function even if the optical cable has been connected.

Procedure for this unit

- Follow steps 1 through 9 in the section concerning recording. (See page 11.)

Procedure for the compact disc player

- Press the stop button. (Disc play will stop.)
 - Press the edit-tape-length button and specify the length of the tape to be used.
 - The tracks to be recorded to side "A" of the tape and those to be recorded to side "B" will then be automatically selected according to the tape's length.
 - Press the play button.
- The recording will start at the same time that play starts at the compact disc player.

For more detailed information, refer to the operating instructions of the applicable Technics compact disc player to be used.

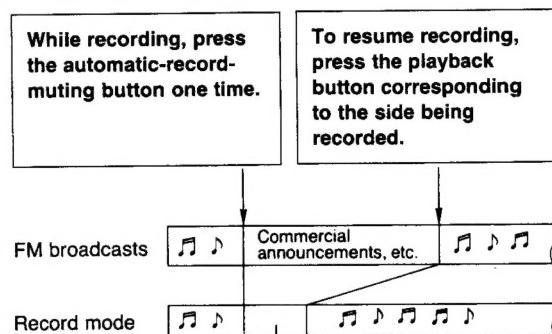
Notes:

- Recordings cannot be made on the leader tape (attached to each end of recording tape), so advance the tape slightly from its end before starting a recording. Also check to be sure that forward-side indicator (\triangleright) is illuminated.
- If the CD program contents to be recorded on side "A" of the tape are shorter than the actual tape length, this unit will continue to record until it reaches the end of side "A", while the compact disc player switches to the pause mode. At the end of side "A", deck 2 automatically switches to side "B" and after few seconds the compact disc player will resume play.
- When canceling the synchro-edit recording mode, press the stop button on the compact disc player and then press the stop button on this unit. (To cancel mid-way through a performance, press the stop button on the compact disc player twice in succession.)

Automatic-record-muting function

By simply pressing the automatic-record-muting button while a recording is being made, a silent interval (which is necessary for locating the beginning of a tune) can be made.

This feature is also convenient for omitting, during recording, unwanted material such as commercial messages, etc.



This unit will record a silent interval (4 seconds long) between tunes, and then will change to the recording stand-by mode.

■ To make a silent interval of more than 4 seconds on the tape

Press and hold the automatic-record-muting button for the necessary number of seconds.

The unit will change to the recording stand-by mode when the button is released.

Recording with High Tone Quality

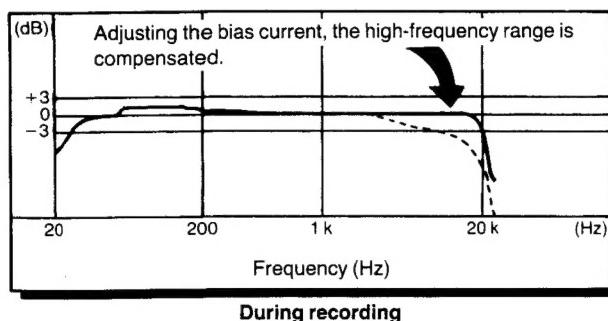
(tape deck 2 only)

Bias adjustment function

When recordings are made with the same recording level into same type (but different brands) of tape, (regular or "normal" tape, for example), you may notice that the reproduced high-frequency sound is different from one tape to another.

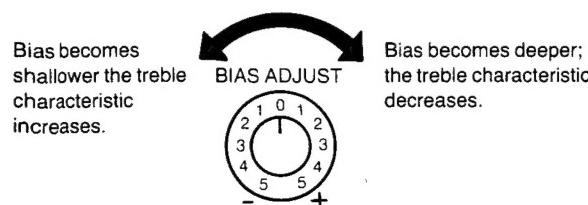
The reason that such differences may be noticed is because there are differences in the frequency response (particularly in the treble range) between cassette tapes of the various manufacturers. Although a noise-reduction system is used recording and playback processes at the same recording level, a difference of the frequency response will result in the processes of recording. Such a problem cannot be corrected in conventional recording system.

In order to overcome this problem, this unit includes a biasadjustment control (for compensation of the frequency response) so that the most appropriate recording can be made.



- 1 Make a recording as explained in steps 1 through 11 of "Recording". (See page 11.)
- 2 Press the rewind button to rewind the tape.
- 3 Press the playback button, and begin playing the sound source once again.
- 4 Switch back and forth between the original sound source and the recorded source by using the input selector on the amplifier.
- 5 Use the bias-adjustment control to adjust so that tone quality in the treble range is the same at both sources.

When making this adjustment it may be helpful to use as a reference the changes made (by the bias-adjustment control) of the between-station noise heard on the FM band. Also note that the adjustment can be made more precisely by listening through headphones while making the adjustment. Connect the headphones to the headphones jack of the amplifier.

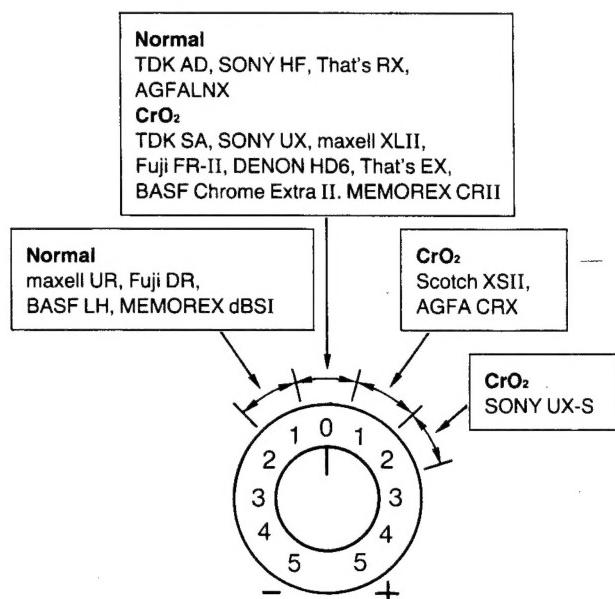


- 6 After repeating the above steps if necessary, rewind the tape and then begin the recording once again.

Notes:

- When metal-coated tape is used, there is almost no difference of the bias characteristics, so there is no necessity to make the bias adjustment (compensation of the frequency response). (No adjustment can be made.)
- The adjustments for the bias does not need to be made again so long as you continue to use the same type and brand of tape that was used when these adjustments are first made.

Refer to the diagram below when adjusting the bias to match a specific tape.



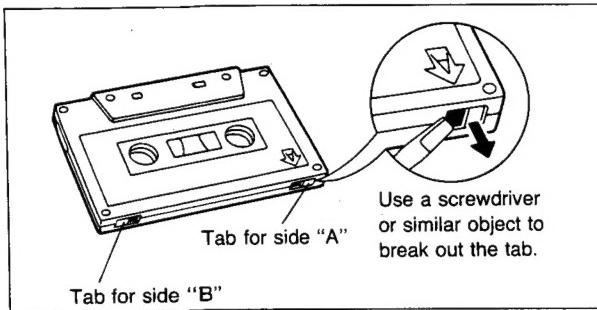
Note:

The diagram shows recommended values based on representative tape characteristics. There is no guarantee that they will produce optimal results in all cases due to slight variations between individual cassettes and cassette decks.

After Recording

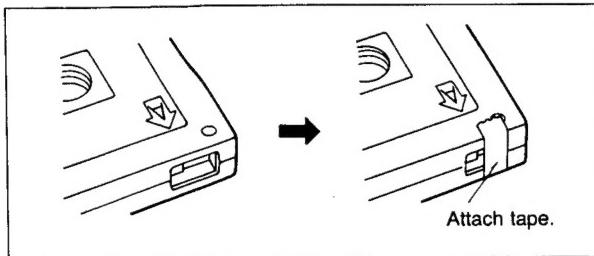
To prevent erasure of recorded sounds

Remove the erase-prevention tabs (thus preventing recording).



■ To re-record on a protected cassette

Block up the hole by adhering a piece of cellophane tape to the area where the safety tab was broken out.



To erase recorded sounds

When new recordings are made on a recorded tape, all sounds recorded on that portion of the tape are automatically erased. To erase a tape without making a new recording, follow the steps below.

- 1 Insert the recorded cassette into the cassette holder of deck 2.
- 2 Set the recording-level control to "0".
- 3 Set the reverse-mode selector to either one-side only (↔) or both sides (↔↔).
- 4 Set the Dolby noise-reduction button to off. (Dolby noise-reduction indicator will then switch OFF.)
- 5 Press the record button.
- 6 Press the playback button corresponding to the side to be erased.

Technical Specifications

■ CASSETTE DECK SECTION

Deck system	Stereo cassette deck
Track system	4-track, 2-channel
Recording system	AC bias
Bias frequency	80 kHz
Erasing system	AC erase
Heads	
Deck 1	Playback head (Permalloy) × 1
Deck 2	Recording/Playback head (Permalloy) × 1
	Erasing head (Double-gap ferrite) × 1
Motors	
Deck 1	Capstan/Reel table drive (DC servo motor) × 1
Deck 2	Capstan/Reel table drive (DC servo motor) × 1
Tape speed	4.8 cm/sec. (1 7/8 ips)
Wow and flutter	0.07% (WRMS) ±0.2% (DIN)
Fast forward and rewind times	Approx. 110 seconds with C-60 cassette tape
Frequency response (Dolby NR off)	
NORMAL	40 Hz~15 kHz, ±3 dB 20 Hz~16 kHz (DIN)
CrO₂	40 Hz~15 kHz, ±3 dB 20 Hz~16 kHz (DIN)
METAL	40 Hz~16 kHz, ±3 dB 20 Hz~17 kHz (DIN)

S/N (signal level = max recording level, CrO₂ type tape)

NR off	56 dB (A weighted)
Dolby B NR on	66 dB (CCIR)
Dolby C NR on	74 dB (CCIR)

Input sensitivity and impedance

LINE IN	60 mV/47 kΩ
----------------	-------------

Output voltage and impedance

LINE OUT	400 mV/800Ω
HEADPHONES	30 mV/(8Ω) (Load impedance 8Ω~600Ω)

■ GENERAL

Power consumption 19 W

Power supply For continental Europe AC 50 Hz/60 Hz, 230 V~240 V

For others AC 50 Hz/60 Hz, 110 V/127 V/220 V/240 V

Dimensions (W×H×D) 430×136×290mm

Weight 4.7 kg

Note:

Specifications are subject to change without notice.

Weight and dimensions are approximate.

Troubleshooting Guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, or consult your dealer for instructions.

Problem	Probable cause(s)	Suggested remedy
While using the tape deck		
Tape moves but no sound is heard.	The volume control of the amplifier is set to its minimum position.	•Adjust the volume control to the desired level.
	The input selector of the amplifier is not set to the "tape" position.	•Set to the "tape" position.
Distorted sound.	The recording level is too high.	•Select the appropriate recording level while recording.
Previously recorded sound has not been erased.	Erase head is dirty.	•Clean the head.
Sound output is hoarse or unsteady.	Heads are dirty.	•Clean the heads.
	Tape is damaged.	•Try operation with a new cassette; if there is no problem with the new cassette, discard the damaged cassette.
Poor sound quality (especially in the high treble and low bass ranges).	The correct Dolby noise-reduction button is not set.	•Set it to the correct position.
Sound is low, poor tone, intermittent sound, noise.	Heads, capstan and/or pinch roller are dirty or tape is damaged.	•Clean the heads, capstan and/or pinch roller, or try a new cassette.
Recording is not possible.	The recording level control is at the "0" position.	•Select the appropriate recording level.
	One of the edit-recording tape-speed indicators is illuminated.	•Switch OFF (by pressing the corresponding edit-recording tape-speed button) whichever edit-recording tape-speed indicator that is illuminated.
The tape deck does not respond to the synchro edit function.	The L-type cable is not connected to the compact disc player.	•Connect the L-type cable to the compact disc player.
	The stereo connection cables are not connected.	•Connect the stereo connection cables to the amplifier.
Operation by remote control transmitter is not possible.	The L-type cable is not connected.	•Connect the L-type cable.
	The stereo connection cables are not connected.	•Connect the stereo connection cables to the amplifier.
A "hum" noise is heard during tape playback or recording.	This unit is placed too close to a receiver, amplifier or tuner.	•Leave as much space as possible between the units, or place them where there is the least amount of "hum".